ABSTRACT

A method and apparatus is disclosed for producing propulsion underwater with minimal acoustical emission. In basic concept, the method comprises the expulsion and sucking of liquid into and out of a liquid port of a watercraft in a manner generating compression and expansion waves adjacent the liquid port. Such expansion and compression waves generate a positive net thrust on the watercraft in a direction opposite that of their expulsion. Also disclosed is a method and apparatus for reducing the drag caused by hull skin friction by actively increasing the momentum of the liquid stream boundary layer adjacent a watercraft via the expulsion of fluid (liquid or gas) from ports in the hull of such a watercraft.